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Core Optical Technologies, LLC

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

CORE OPTICAL TECHNOLOGIES,
LLC,

Plaintiff,

v.

APPLE, INC., a California corporation,
EQUINIX, INC., a Delaware
corporation, VERIZON
COMMUNICATIONS, INC., a
Delaware corporation, GOOGLE, LLC, a
Delaware limited liability company,
AT&T, INC., a Delaware corporation,
and BLOOMBERG L.P., a Delaware
limited partnership.

Defendants.

CASE NO:

**COMPLAINT FOR PATENT
INFRINGEMENT**

JURY TRIAL DEMANDED

1 Plaintiff Core Optical Technologies, LLC (“Plaintiff” or “Core”), through its
2 undersigned counsel, files this Complaint against Defendants Apple, Inc. (“Apple”),
3 Equinix, Inc. (“Equinix”), Verizon Communications, Inc. (“Verizon”), Google, LLC
4 (“Google”), AT&T, Inc. (“AT&T”), and Bloomberg L.P. (“Bloomberg”)
5 (collectively, “Defendants”). For its complaint, Core alleges as follows:

6 **THE PARTIES**

7 1. Core is a limited liability company organized and existing under the laws
8 of the state of California. Core has a principal place of business at 18792 Via
9 Palatino, Irvine, CA 92603.

10 2. Defendant Apple is a corporation organized and existing under the laws
11 of the state of California, with a principal place of business at One Apple Park Way,
12 Cupertino, CA 95014.

13 3. Defendant Equinix is a corporation organized and existing under the
14 laws of the state of Delaware, with a principal place of business at One Lagoon Drive,
15 Redwood City, CA 94065.

16 4. Defendant Verizon is a corporation organized and existing under the
17 laws of the state of Delaware, with a principal place of business at 1095 Avenue of
18 the Americas, New York, NY 10036.

19 5. Defendant Google is a limited liability company organized and existing
20 under the laws of the state of Delaware, with a principal place of business at 1600
21 Amphitheatre Parkway, Mountain View, CA 94043.

22 6. Defendant AT&T is a corporation organized and existing under the laws
23 of the state of Delaware, with a principal place of business at 208 S. Akard St.,
24 Dallas, TX 75202.

25 7. Defendant Bloomberg is a limited partnership organized and existing
26 under the laws of the state of Delaware, with a principal place of business at 713
27 Lexington Avenue, New York, NY 10022.
28

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8. On information and belief, there may be other corporate affiliates of Apple, Equinix, Verizon, Google, AT&T, and Bloomberg who participated in the infringing acts complained of herein. The identities of such affiliates are currently unknown, because publicly-available information does not permit the identification of each affiliate who participated in the infringing acts. Core expects the identities of such affiliates to be revealed in discovery. Core reserves the right to amend this Complaint to name such affiliates, if necessary, once they have been revealed.

JURISDICTION

9. This is an action for infringement of method claims, and *only* method claims, of U.S. Patent No. 6,782,211, entitled “Cross Polarization Interface [sic] Canceler,” which was duly issued by the United States Patent and Trademark Office on August 24, 2004 (“the ’211 patent”). The asserted claims in this case are *only* method claims 30, 32, 33, 35 and 37 of the ’211 patent (“the Asserted Claims”). A copy of the ’211 patent is attached as Exhibit 1 to this Complaint.

10. This Court has subject matter jurisdiction over this case under 28 U.S.C. §§ 1331 and 1338(a), because the claims arise under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq.*

11. This Court has personal jurisdiction over each Defendant, because:

Apple

12. This Court has general personal jurisdiction over Apple because Apple resides in California. Apple resides in California because: (i) it is incorporated under the laws of California; and (ii) its principal place of business is in California, at One Apple Park Way, Cupertino, CA 95014.

13. This Court also has specific personal jurisdiction over Apple because, on information and belief, Apple has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Apple has used the Accused Instrumentalities to provide data and services to individuals and businesses within

1 California, and within this judicial district. For the reasons set forth below, such use
 2 directly infringes the Asserted Claims. Thus, Apple is subject to specific personal
 3 jurisdiction in this district, because it has committed acts of infringement in
 4 California, and because Core's claims arise out of such infringement.

5 Equinix

6 14. This Court has general personal jurisdiction over Equinix because
 7 Equinix resides in California. Equinix resides in California because it has its principal
 8 place of business in California, at One Lagoon Drive, Redwood City, CA 94065.

9 15. This Court also has specific personal jurisdiction over Equinix because,
 10 on information and belief, Equinix has directly infringed the Asserted Claims by
 11 using the Accused Instrumentalities (as defined below) within California, including
 12 within this judicial district. On information and belief, Equinix has used the Accused
 13 Instrumentalities to provide digital infrastructure and data services to persons within
 14 California, and within this judicial district. For the reasons set forth below, such use
 15 directly infringes the Asserted Claims. Thus, Equinix is subject to specific personal
 16 jurisdiction in this district, because it has committed acts of infringement in
 17 California, and because Core's claims arise out of such infringement.

18 Verizon

19 16. This Court has general personal jurisdiction over Verizon because
 20 Verizon conducts systematic and regular business within the state of California. On
 21 information and belief, Verizon has thousands of employees in California. Verizon
 22 maintains dozens of facilities within California, including offices, service centers,
 23 retail stores, and other facilities. Verizon also provides telecommunication services to
 24 tens of millions of customers in California. On information and belief, Verizon
 25 derives millions of dollars in annual revenue from its business in California. Such
 26 systematic, large-scale, regular business subjects Verizon to general personal
 27 jurisdiction in California.

28 17. This Court also has specific personal jurisdiction over Verizon because,

on information and belief, Verizon has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Verizon has used the Accused Instrumentalities to provide telecommunication and other services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, Verizon is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core's claims arise out of such infringement.

Google

18. This Court has general personal jurisdiction over Google because Google resides in California, because it has its principal place of business in California, at 1600 Amphitheatre Parkway, Mountain View, CA.

19. This Court also has specific personal jurisdiction over Google because, on information and belief, Google has directly infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including within this judicial district. On information and belief, Google has used the Accused Instrumentalities to provide data and services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, Google is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core's claims arise out of such infringement.

AT&T

20. This Court has general personal jurisdiction over AT&T because AT&T conducts systematic and regular business within the state of California. AT&T has tens of thousands of employees in California. *See* <https://www.ocregister.com/2020/02/03/att-to-cut-another-200-technician-positions-in-california/> ("Frank Arce, a vice president with Communications Workers of America, whose District 9 represents about 25,000 AT&T employees in

California...”). AT&T maintains dozens of facilities within California, including offices, retail stores, and other facilities. AT&T also provides telecommunication and retail services to tens of millions of residential and business customers in California. On information and belief, AT&T derives millions of dollars in annual revenue from its business in California. Such systematic, large-scale, regular business subjects AT&T to general personal jurisdiction in California.

21. This Court also has specific personal jurisdiction over AT&T because, on information and belief, AT&T has directly infringed the Asserted Claims by using Accused Instrumentalities (as defined below) within California, including within this district. On information and belief, AT&T has used the Accused Instrumentalities to provide data, telecommunication, and other services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, AT&T is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and because Core’s claims arise out of such infringement.

Bloomberg

22. This Court has general personal jurisdiction over Bloomberg because Bloomberg conducts systematic and regular business within the state of California. On information and belief, Bloomberg has hundreds of employees in California. Bloomberg maintains multiple facilities within California, including offices and other facilities. Bloomberg also provides data and media services to a large number of customers in California. On information and belief, Bloomberg derives millions of dollars in annual revenue from its business in California. Such systematic, large-scale, regular business subjects Bloomberg to general personal jurisdiction in California.

23. This Court also has specific personal jurisdiction over Bloomberg because, on information and belief, Bloomberg has infringed the Asserted Claims by using the Accused Instrumentalities (as defined below) within California, including in this judicial district. On information and belief, Bloomberg has used the Accused

Instrumentalities to provide data, media services, and other services to individuals and businesses within California, and within this judicial district. For the reasons set forth below, such use directly infringes the Asserted Claims. Thus, Bloomberg is subject to specific personal jurisdiction in this district, because it has committed acts of infringement in California, and Core's claims arise out of such infringement.

VENUE

24. Venue is proper over each Defendant in this judicial district under 28 U.S.C. §§ 1391 and/or 1400(b), for at least the following reasons:

Apple

25. Venue is proper over Apple because Apple resides in this district, because Apple's principal place of business is located in this district, at One Apple Park Way, Cupertino, CA 95014. *See* 28 U.S.C. § 1400(b).

26. Venue is also proper over Apple because: (i) Apple has regular and established places of business in this district, including its principal place of business at One Apple Park Way, Cupertino, CA 95014; and (ii) on information and belief, Apple has committed direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of services to customers in this district, and/or by using Accused Instrumentalities directly within this district.

27. Thus, venue is proper over Apple under 28 U.S.C. § 1400(b), because Apple resides in this district, has committed acts of infringement in this district, and has regular and established places of business in this district.

Equinix

28. Venue is proper over Equinix because Equinix resides in this district, because its principal place of business is located in this district at One Lagoon Drive, Redwood City, CA 94065.

29. Venue is also proper over Equinix because: (i) Equinix has regular and established places of business in this district, including its principal place of business at One Lagoon Drive, Redwood City, CA 94065; and (ii) on information and belief,

1 Equinix has committed direct infringement in this district, including by using Accused
2 Instrumentalities in connection with its provision of services to customers in this
3 district, and/or by using Accused Instrumentalities directly within this district.

4 30. Thus, venue is proper over Equinix under 28 U.S.C. § 1400(b), because
5 Equinix resides in this district, has committed acts of infringement in this district, and
6 has regular and established places of business in this district.

7 Verizon

8 31. Verizon maintains regular and established places of business in this
9 district, including at least its offices at: (i) 375 Trimble Road, San Jose, CA 95131; (ii)
10 701 First Avenue, Sunnyvale, CA 94089; (iii) 2795 Mitchell Dr, Walnut Creek, CA
11 94598; and (iv) its many retail facilities located in this district.

12 32. On information and belief, Verizon has committed acts of direct
13 infringement in this district, including by using Accused Instrumentalities in
14 connection with its provision of data and telecommunication services to customers in
15 this district, and/or by using Accused Instrumentalities directly within this district.

16 33. Thus, venue is proper over Verizon under 28 U.S.C. § 1400(b), because
17 Verizon has committed acts of infringement in this district, and because it has regular
18 and established places of business in this district.

19 Google

20 34. Venue is proper over Google because Google resides in this district,
21 because its principal place of business is located in this district at 1600 Amphitheatre
22 Parkway, Mountain View, CA.

23 35. Venue is also proper over Google because: (i) Google has regular and
24 established places of business in this district, including its principal place of business
25 at 1600 Amphitheatre Parkway, Mountain View, CA; and (ii) on information and belief,
26 Google has committed acts of direct infringement in this district, including by using
27 Accused Instrumentalities in connection with its provision of services to customers in
28 this district, and/or by using Accused Instrumentalities in this district.

36. Thus, venue is proper over Google under 28 U.S.C. § 1400(b), because Google resides in this district, has committed acts of infringement in this district, and has regular and established places of business in this district.

AT&T

37. AT&T maintains regular and established places of business in this district, including its facilities located at: (i) 5001 Executive Pkwy, San Ramon, CA 94583; (ii) 95 S Almaden Ave, San Jose, CA 95113; and (iii) its many retail and technical support facilities located within this district.

38. On information and belief, AT&T has committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of services to customers within this district, and/or by using Accused Instrumentalities directly within this district.

39. Thus, venue is proper over AT&T under 28 U.S.C. § 1400(b), because AT&T has committed acts of infringement in this district, and because it has regular and established places of business in this district.

Bloomberg

40. Bloomberg maintains regular and established places of business in this district, including at least its facilities located at: (i) Pier 3, The Embarcadero Suite 101, San Francisco, CA 94111; and (ii) 140 New Montgomery St, San Francisco, CA 94105.

41. On information and belief, Bloomberg has committed acts of direct infringement in this district, including by using Accused Instrumentalities in connection with its provision of data, media, and other services to customers within this district, and/or by using Accused Instrumentalities directly within this district.

42. Thus, venue is proper over Bloomberg under 28 U.S.C. § 1400(b), because Bloomberg has committed acts of infringement in this district, and because it has regular and established places of business in this district.

THE ASSERTED PATENT

43. Mark Core, the sole named inventor of the '211 patent, earned his Ph.D.

1 in electrical and computer engineering from the University of California, Irvine, and
 2 is the Manager of Core Optical Technologies, LLC. The pioneering technology set
 3 forth in the '211 patent greatly increases data transmission rates in fiber optic
 4 networks, by enabling two optical signals transmitted in the same frequency band, but
 5 at generally orthogonal polarizations, to be recovered at a receiver. The patented
 6 technology that enables the recovery of these signals includes coherent optical
 7 receivers and related methods that mitigate cross-polarization interference associated
 8 with the transmission of the signals through the fiber optic network. The coherent
 9 receivers and their patented methods mitigate the effects of polarization dependent
 10 loss and dispersion effects that limit the performance of optical networks, greatly
 11 increasing the transmission distance and eliminating or reducing the need for a variety
 12 of conventional network equipment such as amplifiers, regenerators, and
 13 compensators. The patented technology set forth in the '211 patent has been adopted
 14 by Defendants in, at least, their packet-optical transport solutions described below.

15 44. On November 5, 1998, Mark Core filed with the United States Patent
 16 and Trademark Office ("USPTO") Provisional Patent Application No. 60/107,123
 17 ("the '123 application") directed to his inventions. On November 4, 1999, Mark Core
 18 filed with the USPTO a non-provisional patent application, U.S. Patent Application
 19 No. 09/434,213 ("the '213 application"), claiming priority to the '123 application. On
 20 August 24, 2004, the USPTO issued the '211 patent from the '213 application. The
 21 entire right, title, and interest in and to the '211 patent, including all rights to past
 22 damages, has been assigned to Core in an assignment recorded with the USPTO.

23 45. The Asserted Claims of the '211 patent are all method claims. One of
 24 these is claim 33, an independent method claim. Claim 33 is reproduced below, with
 25 parenthetical annotations to identify the different elements of the claim:

26 33. A method comprising:

27 (33a) receiving an optical signal over a single fiber optic
 28

transmission medium,

(33a1) the optical signal being at least two polarized field components independently modulated with independent information bearing waveforms; and

(33b) mitigating cross polarization interference associated with the at least two modulated polarized field components to reconstruct the information bearing waveforms

(33b1) using a plurality of matrix coefficients being complex values to apply both amplitude scaling and phase shifting to the at least two modulated polarized field components.

CORE'S LAWSUIT AGAINST JUNIPER

46. On November 12, 2019, Core filed a complaint against Juniper Networks, Inc. ("Juniper"), asserting infringement of the Asserted Claims of the '211 patent, in the Central District of California. The case was assigned C.D. Cal. Case No. 19-cv-02189 (the "*Juniper* case").

47. On February 21, 2020, Core filed a First Amended Complaint against Juniper. *See Juniper*, Dkt. 27. On March 27, 2020, Core filed a Second Amended Complaint (the "Juniper SAC"). *Juniper*, Dkt. 31. The Juniper SAC is Core's operative complaint in the *Juniper* case. The Juniper SAC is attached as Exhibit 2.

48. On April 1, 2021, the Central District of California granted Juniper's motion to transfer the *Juniper* case to the Northern District of California. *See Juniper*, Dkt. 65. The Northern District of California has assigned the *Juniper* case N.D. Cal. Case No. 21-cv-02428. On April 13, 2021, the Northern District assigned the *Juniper* case to the Honorable Vince Chhabria, U.S.D.J.. *Juniper*, Dkt. 72.

49. In the Juniper SAC, Core asserts that Juniper infringed the Asserted Claims by making, selling, using, importing, offering for sale, contributing to, and/or inducing its customers' use of certain "Fiber Optic XPIC Devices." Ex. 2, ¶¶ 16-17,

56-75. The Fiber Optic XPIC Devices are defined as Juniper’s “devices that can be configured to mitigate and/or cancel cross polarization interference in received fiber optic signals . . . [t]hese devices include, but are not limited to, (i) the PTX 3000 and PTX 5000 Optical Transport Platforms (the ‘PTX Family’), (ii) the BTI7800 Series Optical Transport Platform (the ‘BTI 7800’); (iii) the MX Series routers (the ‘MX Series’); and (iv) the modules, line cards and interface cards which are used with the foregoing to implement Juniper’s polarization-division multiplexing (‘PDM’) and cross-polarization interference (‘XPI’) mitigation functionality, including the relevant Universal Forwarding Modules (UFMs), BTI Interface Cards (BICs), transceivers, Dense Port Concentrators (DPCs), Physical Interface Cards (PICs), Flexible PIC Concentrators (FPCs), Modular Interface Cards (MICs), Modular Port Concentrators (MPCs), and other relevant modules and cards (the ‘Modules and Cards’).” *Id.*, ¶ 16.

50. In addition to the Platforms listed in the Juniper SAC, Core has discovered a number of other Juniper Platforms which are configured to infringe the Asserted Claims, including: the PTX 100008/10016 Platforms, the QFX 10008/10016 Platforms, and the ACX6160/ACX360 Platforms. Additionally, Core has identified a number of specific line cards and modules that are used with the Platforms identified in Paragraphs 49-50 *supra* to perform infringing dual-polarization communication, including: (i) PTX-2-100G-WDM (100-Gigabit DWDM OTN PIC); (ii) PTX-5-100G-WDM (100-Gigabit DWDM OTN PIC); (iii) PTX10K-LC1104 (PTX10K 6x100G/150G/200G DWDM line card); (iv) MIC3-100G-DWDM; (v) BT8A78UFM3; (vi) BT8A78UFM4 (Universal Forwarding Module with Integrated 100G Coherent MSA XCVR); (vii) BT8A78UFM6 (Universal Forwarding Module with Integrated 400G Coherent); (viii) QFX10K-12C-DWDM (QFX10K DWDM full capacity 1.2T line card bundle); (ix) QFX10K-6C-DWDM; (x) QFX10K-2P-DWDM (Coherent Line Card); (xi) 2x100G DWDM Mezzanine Card; (xii) 2x200G Coherent Optical Module; (xiii) 100G-400G Flex-Rate DWDM Optical Module; (xiv) 100G CFP ZR; (xv) 100G CFP DWDM; (xvi) CFP-DCO, 100G only; (xvii) CFP2-DCO, 100G/200G; (xviii)

TCFP2-100G-C (CFP2 100G Module); (xix) CFP-100GBASEZR (100GBASE-ZR CFP pluggable optics module); (xx) CFP2-DCO-T-WDM-1; (xxi) CFP2-DCO-100G-HG; (xxii) 100G DWDM CFP2 Optics Module; (xxiii) BP3AMCTL; (xxiv) 100G Coherent MSA Transceiver Module; (xxv) CFP2-DCO-T-WDM-2; (xxvi) UFM3; (xxvii) UFM4; (xxviii) UFM5; (xxix) UFM6; (xxx) Part No. 740-053622; (xxxi) Part No. 740-073963; (xxxii) Part No. 740-067752; (xxxiii) Part No. 740-072229; (xxxiv) Part No. SC004594; (xxxv) Capella; (xxxvi) Voodoo; (xxxvii) Cordoba; (xxxviii) CFP-100GBASE-CHRT; (xxxix) MSA-UFM4; (xl) CFPUFM3; (xli) BT8A78CFP1G; and (xlii) BT8A78UFM5.

51. Herein, the term “Accused Instrumentalities” means all of the products identified in Paragraphs 49-50 *supra*.

52. As alleged in the Juniper SAC, when the Accused Instrumentalities are used in their ordinary, intended fashion, such use constitutes direct infringement of the Asserted Claims of the ’211 patent. *See* Ex. 2, ¶¶ 16-50.

DEFENDANTS’ INFRINGING USE

53. On information and belief, Apple, Equinix, Verizon, Google, AT&T, Bloomberg, and/or their affiliates, have directly infringed each Asserted Claim of the ’211 patent, by using one or more of the Accused Instrumentalities within the United States, less than six years before the filing of this Complaint, and prior to the November 4, 2019 expiration date of the ’211 patent (the “Relevant Time Period”).

54. On information and belief, each Defendant purchased one or more of the Accused Instrumentalities from Juniper, and used such Accused Instrumentalities within the United States, during the Relevant Time Period. For the reasons set forth in Paragraphs 16-50 of the Juniper SAC, which are incorporated herein by reference in their entirety, such use constituted direct infringement of the Asserted Claims of the ’211 patent by the Defendants.

55. As for Apple, the LinkedIn page of Juniper’s “Design Consultant” Andy Hopper (Ex. 3) shows that Apple used Accused Instrumentalities during the Relevant

Time Period. From June-November 2016, which is during the Relevant Time Period, Mr. Hopper worked as a “Network Engineer” for Apple. One of his responsibilities at Apple was to “[u]pgrade[] the existing equipment and arrang[e] relevant RMA of devices and components as required which consisted of . . . **Juniper MX960, MX480, MX140 and SRX410 devices.**” Ex. 3 at 3. The MX480 and MX960 Platforms are two of the Accused Instrumentalities. Thus, Mr. Hopper’s LinkedIn page shows that Apple used Accused Instrumentalities during the Relevant Time Period. While Mr. Hopper performed this work in the United Kingdom, on information and belief, because Apple used Accused Instrumentalities in the United Kingdom, it also used them in the United States (its base of operations, and its largest market). Thus, on information and belief, Mr. Hopper’s LinkedIn page shows that Apple used Accused Instrumentalities in the United States during the Relevant Time Period.

56. This is confirmed by the LinkedIn page of Apple’s Senior Network Engineer Blake Wilson (Ex. 4). Mr. Wilson has worked for Apple from July 2015 to the present. *Id.* at 2. Prior to that, he was a “Senior Systems Engineer” at Juniper’s predecessor-in-interest, BTI, for nearly eight years, from August 2007 to June 2015. *Id.* Those are Mr. Wilson’s only two relevant and most recent positions. *Id.* at 2-6. Mr. Wilson states that he has “Extensive experience in **Multi-Tbps Coherent Optical technologies** with **specific emphasis on Metro/Regional/Long Haul DCI architectures.**” *Id.* at 1. On information and belief, the “Multi-Tbps Coherent Optical technologies” referenced by Mr. Wilson include the BTI 7800 Series, which was the flagship multi-Tbps coherent system of BTI, which is where Mr. Wilson worked for the majority of his career. Mr. Wilson further states that, while working at BTI, he had “experience in working with . . . some of the largest Web 2.0/Content Service Provider companies.” *Id.* at 1. Mr. Wilson still further states that, while at BTI, his responsibilities included to “serve as technical lead for customer NPI rollout of BTI’s Next Generation Multi-Tbps Optical-LSR platform,” i.e., the accused 7800 system. *Id.* at 2. It is apparent that Mr. Wilson’s primary responsibility at BTI was to interface with

1 major customers, including by working at their facilities on-site. *Id.* at 2-6. On
 2 information and belief, and based on the foregoing evidence, one of Mr. Wilson's
 3 responsibilities while working at BTI was to assist ***BTI's customer Apple*** in using the
 4 accused BTI 7800 systems. Subsequently, on information and belief, based on Apple's
 5 apparent familiarity with Mr. Wilson, and his familiarity with the BTI 7800 systems,
 6 Apple seamlessly hired Mr. Wilson from Juniper in June/July 2015 to, *inter alia*,
 7 continue assisting it in operating its BTI 7800 systems. Thus, on information and belief,
 8 Mr. Wilson's LinkedIn page further confirms that Apple used Accused
 9 Instrumentalities in the United States during the Relevant Time Period.

10 57. Based on the foregoing information, and on information and belief, Apple
 11 used Accused Instrumentalities in an infringing manner, during the Relevant Time
 12 Period, in the United States. On information and belief, Apple used the Accused
 13 Instrumentalities to operate fiberoptic networks for itself and customers in the U.S. On
 14 information and belief, Apple used the Accused Instrumentalities in connection with
 15 providing cloud computing, cloud storage, data center, telecommunication, and SaaS
 16 services to customers in the United States. On information and belief, Apple used the
 17 Accused Instrumentalities in connection with providing iCloud, App Store, Apple
 18 Arcade, Apple Pay, Apple TV, Apple News, Apple Music, CloudKit, iTunes, and other
 19 products and services to customers in the United States.

20 58. As for Equinix, an October 2014 press release datelined "Sunnyvale, CA"
 21 (in the United States) shows that Equinix deployed the MX Series routers to enhance
 22 its cloud-based network environment. *See* Ex. 5 (press release) at 1-2. The MX Series
 23 routers are Accused Instrumentalities. Thus, this press release demonstrates that
 24 Equinix used Accused Instrumentalities in the U.S. during the Relevant Time Period.

25 59. The LinkedIn page of Equinix's Director of Network Engineering and
 26 Operations, Vijayakumar Sethuraman, confirms this. *See* Ex. 6. Mr. Sethuraman has
 27 spent almost his entire 20-year career at Equinix. *Id.* at 1-3. Mr. Sethuraman states that,
 28 while working at Equinix, he was "lead engineer for [the] overall DWDM Metro

1 Connect platform in Asia Pacific.” *Id.* at 2. Mr. Sethuraman further states that his
 2 experience at Equinix includes using the “*Juniper MX480*,” and “Metro Connect on
 3 DWDM . . . *BTI* . . . *7800*,” both of which are Accused Instrumentalities. *Id.* at 1. While
 4 Mr. Sethuraman appears to have worked primarily in Asia, on information and belief,
 5 since Equinix used Accused Instrumentalities in Asia, it also used them in the United
 6 States, its headquarters and base of operations. Thus, this LinkedIn page confirms that
 7 Equinix used Accused Instrumentalities in the U.S. during the Relevant Time Period.

8 60. Based on the foregoing information, and on information and belief,
 9 Equinix used Accused Instrumentalities in an infringing manner, during the Relevant
 10 Time Period, in the United States. On information and belief, Equinix used the Accused
 11 Instrumentalities in connection with providing cloud computing and/or data center
 12 services to customers in the United States. On information and belief, Equinix used the
 13 Accused Instrumentalities to operate fiberoptic networks in the United States for itself
 14 and for customers.

15 61. As for Verizon, an article on the website TeleCompetitor shows that
 16 Verizon deployed Juniper’s PTX 5000 routers for a 400G field trial in Dallas in
 17 December 2017. *See* Ex. 7 (article) at 1-2. This shows that Verizon used the PTX
 18 Family – one of the Accused Instrumentalities– within the United States to perform
 19 infringing dual-polarization communication during the Relevant Time Period.

20 62. A Verizon press release (Ex. 8) further confirms that Verizon used
 21 Accused Instrumentalities to perform infringing dual-polarization communication in
 22 the U.S. during the Relevant Time Period. The press release, dated June 25, 2012,
 23 states that Verizon would “deploy the Juniper Networks® PTX Series in major
 24 markets in the U.S. . . by the end of this year [2012].” *Id.* at 1. The press release also
 25 states that Verizon used the PTX equipment to “upgrade . . . the Verizon global IP
 26 backbone to 100G Ethernet,” which confirms that Verizon used the equipment to
 27 perform infringing dual-polarization communication. *Id.* The press release further
 28 states that Verizon would “initially deploy the PTX5000, which delivers eight terabits

per second of capacity, with plans to eventually move toward higher terabit capacity,” further confirming the use of Accused Instrumentalities. *Id.* On information and belief, because Verizon used this equipment in its “global IP backbone,” its use of that equipment continued into the Relevant Time Period. Thus, Verizon committed infringing use of Accused Instrumentalities during the Relevant Time Period.

63. Based on the foregoing information, and on information and belief, Verizon used Accused Instrumentalities in an infringing manner, during the Relevant Time Period, in the United States. On information and belief, Verizon used the Accused Instrumentalities to provide telecommunication, cloud computing, and data services to customers in the United States. On information and belief, Verizon used the Accused Instrumentalities in connection with providing telecommunication services to customers in the United States, including Internet Service Provider (ISP), telephone, and television services. On information and belief, Verizon used the Accused Instrumentalities in connection with providing Enterprise Business, Small Business, and Residential telecommunication services to customers in the U.S. On information and belief, Verizon used the Accused Instrumentalities to operate fiberoptic networks in the United States for itself and for customers.

64. As for Google, the LinkedIn page of Juniper’s former Customer Focused Technical Support Engineer Aamir Khan (Ex. 9) demonstrates that Google used Accused Instrumentalities in the United States during the Relevant Time Period. Mr. Khan worked for Juniper in that role from April 2016 – July 2019, which is during the relevant time period. Ex. 9 at 3. Mr. Khan’s responsibilities included “Providing Focal Technical support and handl[ing] high priority issues for Advanced Services customers like Verizon, **Google**, ATT on Juniper Networks routing products.” *Id.* In particular, Mr. Khan assisted Google with “Architecture level Troubleshooting on various Juniper products - **MX2020**, **MX2010** **PTX5000** **PTX3000** T640, M320, **MX960**, **MX480**, **MX80**.” *Id.* All of the highlighted products are Accused Instrumentalities. Thus, Google used Accused Instrumentalities in the U.S. during the Relevant Time period.

65. This is confirmed by the LinkedIn page of Juniper’s Technical Leader Vinay Kallesh (Ex. 10). Mr. Kallesh has worked at Juniper from January 2011 to the present, which includes the Relevant Time Period. At Juniper, Mr. Kallesh has been “Responsible for Engineering Escalation Supporting Cloud Data Center Infrastructure for customers like ATT, **Google**, Microsoft, AMZN, Equinox, Oracle and Dropbox.” *Id.* at 2. In particular, Mr. Kallesh has been responsible for the “QFX5100, **QFX10K series data** center switches, Core IP/MPLS switch (T4000) & **Converged Super core packet(PTX5000) transport**. These are the industry’s most advanced network gear for cloud infrastructure.” *Id.* at 2. The highlighted products are all Accused Instrumentalities. Thus, Mr. Kallesh’s LinkedIn page confirms that Google used Accused Instrumentalities in the U.S. during the Relevant Time Period.

66. This is further confirmed by the LinkedIn page of Juniper’s Software/System Test Engineer Rogini P. *See* Ex. 11. Ms. P. has worked for Juniper from March 2011 to the present, which includes the Relevant Time Period. Ms. P. has “Design[ed], develop[ed] and execute[d] network test solutions for customers(Facebook, **Google** and Yahoo).” *Id.* at 1. In particular, Ms. P works with “Juniper’s MX-series (**MX-2020, MX-960, MX-480, MX-240**, MX-80) routers and PTX series (PTX1000, **PTX5000**, PTX10002-60C, **PTX10008**). The highlighted products are all Accused Instrumentalities. This further confirms that Google used Accused Instrumentalities in the U.S. during the Relevant Time Period.

67. Based on the foregoing information, and on information and belief, Google used Accused Instrumentalities in an infringing manner, during the Relevant Time Period, in the United States. On information and belief, Google used the Accused Instrumentalities in providing telecommunication and data services to customers in the United States. On information and belief, Google used the Accused Instrumentalities in providing cloud computing and cloud storage services to customers in the United States. On information and belief, Google used the Accused Instrumentalities in providing web search and advertising services to customers in the United States. On

1 information and belief, Google used the Accused Instrumentalities in providing Google
 2 Suite and Google Workspace products and services to customers in the United States.
 3 On information and belief, Google used the Accused Instrumentalities in providing
 4 Gmail, Google Drive, Google Docs, Google Sheets, Google Slides, Google Calendar,
 5 Google Chat, Google Contacts, and other Software as a Service (SaaS), Platform as a
 6 Service (PaaS), and Infrastructure as a Service (IaaS) products and services to
 7 customers in the United States. On information and belief, Google used the Accused
 8 Instrumentalities in providing Google App Engine and Google Compute Engine
 9 products and services to customers in the United States. On information and belief,
 10 Google used the Accused Instrumentalities to provide Google Fiber and other
 11 telecommunication services to customers in the United States. On information and
 12 belief, Google used the Accused Instrumentalities to operate fiberoptic networks in the
 13 United States for itself and for customers.

14 68. As for AT&T, the LinkedIn profile of Juniper’s “Complex Product
 15 Implementation Leader, AT&T Account” Eric Lakes (Ex. 12) demonstrates that AT&T
 16 used Accused Instrumentalities in the United States during the Relevant Time Period.
 17 Mr. Lakes, based in the United States, has been Juniper’s “AT&T Account” leader from
 18 January 2013 to the present, indicating that AT&T has been a major Juniper customer
 19 for at least that long. Mr. Lakes’s responsibilities have included “Directing new product
 20 introduction, certification, and life cycle management of Juniper’s flagship hardware
 21 and software products . . . into AT&T national lab and production network
 22 environments in support of AT&T strategic deployment campaigns including . . .
 23 ***Juniper MX / EX / NFX / QFX***, Service Delivery Gateway (SDG), Universal Access
 24 Router (***ACX***).” Ex. 12 at 1. The highlighted products are all Accused Instrumentalities.
 25 Thus, Mr. Lakes’s Linked page shows that AT&T used Accused Instrumentalities in
 26 the United States during the Relevant Time Period.

27 69. This is confirmed by the LinkedIn page of AT&T’s Network Engineer
 28 Bhushan Saindre (Ex. 13). Mr. Saindre has been an AT&T Network Engineer, based

1 out of New Jersey, from September 2015 to the present. Ex. 13 at 1. Mr. Saindre’s
 2 duties include “working with . . . *Juniper MX-480*” routers, which are Accused
 3 Instrumentalities. *Id.* at 2. This confirms that AT&T used Accused Instrumentalities in
 4 the United States during the Relevant Time Period.

5 70. Based on the foregoing information, and on information and belief, AT&T
 6 used Accused Instrumentalities in an infringing manner, during the Relevant Time
 7 Period, in the United States. On information and belief, AT&T used the Accused
 8 Instrumentalities to provide telecommunication services to customers in the United
 9 States, including Internet Service Provider (ISP), telephone, and television services. On
 10 information and belief, AT&T used the Accused Instrumentalities in connection with
 11 providing Enterprise Business, Small Business, and Residential telecommunication
 12 services to customers in the U.S. On information and belief, AT&T also used the
 13 Accused Instrumentalities in connection with providing fiber-to-the-premises services
 14 in the United States. On information and belief, AT&T also used the Accused
 15 Instrumentalities in connection with providing cloud computing and/or data center
 16 services to customers in the United States. On information and belief, AT&T used the
 17 Accused Instrumentalities to operate fiberoptic networks in the United States.

18 71. As for Bloomberg, the LinkedIn page for Bloomberg’s Network Engineer
 19 with Automation Faisal Imdad indicates that, while working for Bloomberg from July
 20 2012 to the present, Mr. Imdad worked to upgrade and maintain Bloomberg on the
 21 Juniper MX series routers. Ex. 14 at 3. Mr. Imdad further states that he is an “Expert in
 22 Juniper M, MX, QFX, EX, ACX, PTX, J, and SRX Series,” further indicating that
 23 Bloomberg used Accused Instrumentalities during the Relevant Time Period. *Id.* at 1.
 24 While Mr. Imdad works in the United Kingdom, on information and belief, because
 25 Bloomberg uses this equipment in the United Kingdom, it also uses it in the United
 26 States, its base of operations and largest market. Thus, Bloomberg used Accused
 27 Instrumentalities in the United States during the Relevant Time Period.

28 72. A March 17, 2015 article in Network World, titled “Does Juniper have too

many SDNs?” (Ex. 15), confirms that as of 2015 (in the Relevant Time Period), Bloomberg was a Juniper customer. Ex. 15 at 4. This further supports the conclusion that Bloomberg used Accused Instrumentalities during the Relevant Time Period.

73. Based on the foregoing information, and on information and belief, Bloomberg used Accused Instrumentalities in an infringing manner, during the Relevant Time Period, in the United States. On information and belief, Bloomberg used the Accused Instrumentalities to provide telecommunication, cloud computing, and data services to customers in the United States. On information and belief, Bloomberg used the Accused Instrumentalities to operate fiberoptic networks in the United States for itself and for customers.

74. Accordingly, each Defendant used Accused Instrumentalities within the United States during the Relevant Time Period. For the reasons set forth in Paragraphs 16-50 of the Juniper SAC—which are incorporated herein by reference—such use constituted direct infringement of the Asserted Claims. Thus, each Defendant committed direct infringement of the Asserted Claims within the Relevant Time Period.

MARKING

75. Core has never made, sold, used, offered to sell, or imported into the United States any article that practices any claim of the ’211 Patent. Core has never sold, commercially performed, or offered to commercially perform any service that practices any claim of the ’211 Patent.

76. Prior to October 21, 2014, Core had never authorized, licensed, or in any way permitted any third party to practice any claim of the ’211 Patent.

77. Moreover, Core alleges that Defendants infringe **only** method claims of the ’211 patent. Core does not allege that Defendants infringe any apparatus claims of the ’211 patent. The marking requirement of 35 U.S.C. § 287(a) does not apply when a patentee only asserts infringement of method claims. *See Crown Packaging Tech., Inc. v. Rexam Beverage Can Co.*, 559 F.3d 1308, 1316 (Fed. Cir. 2009); *Hanson v. Alpine Valley Ski Area, Inc.*, 718 F.2d 1075, 1082-83 (Fed.Cir.1983).

78. Because Core has never directly marketed any product or service that practices any of the claimed inventions of the '211 Patent, and no third party was authorized to practice any claimed inventions of the '211 patent prior to October 21, 2014, 35 U.S.C. § 287(a) cannot prevent or otherwise limit Core's entitlement to damages for acts of infringement that occurred prior to October 21, 2014.

79. Because Core alleges that Defendants infringe only method claims of the '211 patent, 35 U.S.C. § 287(a) does not apply, even for acts of infringement that occurred after October 21, 2014. Thus, 35 U.S.C. § 287(a) does not limit Core's entitlement to damages against Defendants, in any way, for any period of time.

80. In another pending case, *Core Optical Techs., LLC v. Nokia Corp. et al.*, C.D. Cal. Case No. 19-cv-02190 ("the *Nokia* case"), the court has ruled that the marking requirement does not apply, because Core is asserting only method claims against the Nokia Defendants. *See Nokia* case, Dkt. 61 at 5-7.

DEFENDANTS' KNOWLEDGE OF THE '211 PATENT

81. On information and belief, and for the reasons set forth below, each Defendant knew of the existence and relevance of the '211 patent when they committed the infringing acts described in Paragraphs 53-74 above.

82. On information and belief, each Defendant knew of the '211 Patent's existence and relevance due to Core's filing of complaints for infringement of that patent in: (1) Central District of California Case No. SACV 12-1872 AG, styled *Core Optical Technologies, LLC v. Ciena Corporation, et al.* (filed October 29, 2012); (2) Central District of California Case No. SACV 16-0437 AG, styled *Core Optical Technologies, LLC v. Fujitsu Network Communications, Inc.* (filed March 7, 2016); and (3) Central District of California Case No. SACV 8:17-cv-00548AG, styled *Core Optical Technologies, LLC v. Infinera Corp.* (filed March 24, 2017).

83. On information and belief, as major participants in the optical networking industry, Defendants monitor patent lawsuits against other participants in the industry. On information and belief, through such monitoring, Defendants knew

1 of—or were willfully blind to—the existence of the '211 Patent, due to Core's three
 2 prior lawsuits against other industry suppliers/manufacturers. Through such
 3 monitoring, Defendants knew—or were willfully blind—that normal use of the
 4 Accused Instrumentalities infringes the '211 patent.

5 84. Moreover, Defendants knew of the existence and relevance of the '211
 6 patent because they are all Juniper customers for the Accused Instrumentalities.

7 85. As shown in Paragraphs 64-67 of the Juniper SAC, which are incorporated
 8 by reference herein in their entirety, Juniper knew of the existence and relevance of the
 9 '211 patent throughout the Relevant Time Period. On information and belief, as Juniper
 10 customers, the Defendants were made aware, through Juniper, of the existence and
 11 relevance of the '211 patent during the Relevant Time Period. Accordingly, on
 12 information and belief, each Defendant committed infringing acts while: (i) being
 13 aware of the '211 patent; and (ii) knowing that normal use of the Accused
 14 Instrumentalities infringes the Asserted Claims.

15 86. On information and belief, Juniper apprised the Defendants of the
 16 existence and relevance of the '211 patent prior to, or during, the Relevant Time Period.
 17 Thus, on information and belief, all Defendants committed infringing acts with
 18 knowledge of the existence and relevance of the '211 patent.

19 JOINDER

20 87. Joinder of all Defendants is proper under 35 U.S.C. § 299(a).

21 88. Core accuses all Defendants of infringing the Asserted Claims by using
 22 the Accused Instrumentalities. Thus, Core's "right to relief" against all Defendants
 23 arises out of Defendants' "using . . . [in the United States] of the *same accused product*
 24 *or process*," as required by 35 U.S.C. § 299(a)(1).

25 89. Moreover, "questions of fact common to all defendants . . . will arise in
 26 the action," as required by 35 U.S.C. § 299(a)(2). These include, at least: (i) questions
 27 as to whether use of the Accused Instrumentalities infringes the Asserted Claims; and
 28 (ii) questions relating to the value of the patented technology to those Devices.

90. Thus, joinder of all Defendants is proper under 35 U.S.C. § 299(a).

COUNT I – DIRECT PATENT INFRINGEMENT

91. Core repeats and realleges each and every allegation contained in Paragraphs 1-90 above as if fully set forth herein.

92. Each Defendant has committed direct infringement of each Asserted Claim of the '211 patent, in violation of 35 U.S.C. § 271(a), by performing all the steps of each Asserted Claim in the U.S., during the Relevant Time Period.

93. As set forth in Paragraphs 53-74 *supra*, each Defendant used Accused Instrumentalities within the United States during the Relevant Time Period. For the reasons set forth in Paragraphs 16-50 of the Juniper SAC, which are incorporated herein by reference, such use constitutes direct infringement of each Asserted Claim of the '211 patent. Thus, each Customer Defendant has directly infringed each Asserted Claim of the '211 patent during the Relevant Time Period.

REMEDIES, ENHANCED DAMAGES, EXCEPTIONAL CASE

94. Core repeats and realleges each and every allegation contained in Paragraphs 1-93 *supra*, as if fully set forth herein.

95. Defendants' direct infringement of the '211 patent has caused, and will continue to cause, significant damage to Core. As a result, Core is entitled to an award of damages adequate to compensate it for Defendants' infringement, but in no event less than a reasonable royalty pursuant to 35 U.S.C. § 284. Core is also entitled to recover prejudgment interest, post-judgment interest, and costs.

96. For at least the reasons set forth in Paragraphs 81-86 *supra*, prior to the filing of this Complaint, Defendants knew (or were willfully blind) that the Accused Instrumentalities are configured to infringe the Asserted Claims of the '211 Patent during normal use. Despite this known, objectively-high risk that their actions constituted direct and indirect infringement, Defendants continued to directly infringe the '211 patent, up to the expiration of the '211 patent. Accordingly, Defendants' infringement has been (and is) willful.

1 97. In addition to being willful, Defendants’ conduct has been egregious.

2 98. As set forth in Paragraphs 81-86 *supra*, despite knowing of (or being
3 willfully blind to) their infringement, Defendants continued to infringe, on a large
4 scale, until the ’211 patent expired. Defendants are large companies with hundreds of
5 millions, or billions, of dollars in annual revenue. Meanwhile, Plaintiff is a small
6 company, owned by an individual inventor. On information and belief, Defendants
7 persisted in their willful infringement, at least in part, because they believed they
8 could use their superior resources to overwhelm Plaintiff in litigation. If proven, this
9 would constitute “egregious” conduct, warranting enhanced damages.

10 99. Moreover, the validity of the ’211 patent has been thrice confirmed by
11 the Patent Trial and Appeal Board (“PTAB”), in: (i) IPR2016-01618, filed by Fujitsu
12 Network Communications, Inc.; (ii) IPR2018-01259, filed by Infinera Corporation;
13 and (iii) IPR2020-01664, filed by Nokia and Juniper. In all three *Inter Partes* Review
14 proceedings, the Petitioners—who were defendants in litigation—cited numerous
15 prior art references, to attempt to establish that claims of the ’211 patent, including
16 the Asserted Claims, were invalid. Yet, in all three cases, the PTAB **denied**
17 institution, finding that the Petitioners had failed to establish a “reasonable
18 likelihood” that **any** claim of the ’211 patent was invalid. *See* Ex. 16 (decision
19 denying review in IPR2016-01618); Ex. 17 (decision denying review in IPR2018-
20 01259); Ex. 18 (decision denying review in IPR2020-01664). Because the PTAB has
21 already rejected three extensive invalidity challenges to the ’211 patent, Defendants
22 cannot reasonably believe that they have a viable invalidity defense. Defendants’
23 decision to persist in known, clearly-infringing conduct, despite the lack of any viable
24 invalidity defense, is further evidence of “egregiousness.”

25 100. For at least the foregoing reasons, Defendants’ conduct has been willful
26 and egregious. Accordingly, under 35 U.S.C. § 284, the Court should enhance Core’s
27 damages in this case by up to three times the amount found or assessed.

28 101. For at least the foregoing reasons, this case is an “exceptional” case

1 within the meaning of 35 U.S.C. § 285. Accordingly, Core is entitled to an award of
 2 attorneys' fees and costs, and the Court should award such fees and costs.

3 **PRAYER FOR RELIEF**

4 WHEREFORE, Core prays for relief as follows:

- 5 1. That judgment be entered in favor of Core, and against Defendants;
- 6 2. That Core be awarded damages adequate to compensate it for
 7 Defendants' infringement of the Asserted Claims of the '211 Patent, in an amount to
 8 be determined at trial, as well as interest thereon;
- 9 3. That Core be awarded the costs of suit;
- 10 4. That Defendants' infringement be declared willful and egregious;
- 11 5. That the Court increase Core's damages up to three times the amount
 12 assessed under 35 U.S.C. § 284;
- 13 6. That the Court declare this an exceptional case under 35 U.S.C. § 285,
 14 and award Core its attorneys' fees and costs incurred in this action; and
- 15 7. That the Court grant such further relief as it deems just and proper.

17 **JURY TRIAL DEMAND**

18 Core demands a jury trial on all issues so triable.

20 DATED: April 27, 2021

GLASER WEIL FINK HOWARD
 AVCHEN & SHAPIRO LLP

23 By: /s/Lawrence M. Hadley

LAWRENCE M. HADLEY
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25 Attorneys for Plaintiff
 Core Optical Technologies, LLC